From Project3

Thursday, July 21, 2022 10:35 PM

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#include <iostream>
#include <string>
#include <fstream>
#include <iomanip>
using namespace std;
class student {
    int studentno;
    char name[50];
    int eng_mark, math_mark, physics_mark, chemistry_mark;
    double average;
    char grade;
    public:
    void getdata();
    void showdata();
    void calculate();
    int retrollno();
};
void student::calculate()
{
    average = (eng_mark + math_mark + physics_mark + chemistry_mark) / 4;
    if(average >= 90) {
        grade = 'A';
    }
    else if (average >= 80){
        grade = 'B';
    }
    else if (average >= 70) {
        grade = 'C';
    }
    else if (average >= 60) {
        grade = 'D';
    }
    else {
        grade = 'F';
    }
}
void student::showdata()
{
    cout << "The student number you requested : " << studentno << endl;
    cout << "The name : " << name << endl;
    cout << "Average score of the student : " << average << endl;
    cout << "The final grade for the student is : " << grade << endl;
}
void student::getdata()
{
    cout << "\nInput the student number : ";
    cin >> studentno;
    cout << "\nInput the name of the student : ";
    cin >> name;
    cout << "\nInput the English score of the student : ";
    cin >> eng_mark;
    cout << "\nInput the Math score of the student : ";
    cin >> math_mark;
    cout << "\nInput the Physics score of the student : ";
    cin >> physics_mark;
    cout << "\nnnput the Chemistry score of the student : ";
    cin >> chemistry_mark;
    calculate();
}
int student::retrollno()
{
    return studentno;
}
void create_student();
void display_sp(int);
void display_all();
void delete_student(int);
void change_student(int);
//////////////////////////////////////////////       MAIN        ////////////////////////////////////////////////////////////
//////
int main()
{
    char ch;
    cout << setprecision(2);
    do
    {
        char ch;
        int num;
        cout <<"\n\n\n\tMENU";
        cout <<"\n\n\n\t1. Create student record";
        cout <<"\n\n\n\t2. Search student record";
        cout <<"\n\n\n\t3. Display all students records ";
        cout <<"\n\n\n\t4. Delete student record";
        cout <<"\n\n\n\t5. Modify student record";
        cout <<"\n\n\n\t6. Exit";
        cout <<"What is your Choice (1/2/3/4/5/6) ";
        cin >> ch;
        system("cls");
        switch(ch)
        {
        case '1' : create_student(); break;
        case '2' : cout << "\n\n\tEnter The roll number ";
        cin >> num;
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        display_sp(num); break;
        case '3' : display_all(); break;
        case '4' : cout << "\n\n\tEnter the roll number ";
        cin >> num;
        delete_student(num); break;
        case '5' : cout << "\n\n\tEnter The roll number "; cin >> num;
        change_student(num); break;
        case '6' : cout << "Exiting, Thank you!"; exit(0);
        }
    } while (ch!='6');
        return 0;
}
void create_student()
{
    student stud;
    ofstream oFile;
    oFile.open("student.dat", ios::binary|ios::app);
    stud.getdata();
    oFile.write(reinterpret_cast<char *> (&stud), sizeof(student));
    oFile.close();
        cout << "\n\nStudent record has been created ";
    cin.ignore();
    cin.get();
}
void display_all()
{
    student stud;
    ifstream inFile;
    inFile.open("student.dat", ios::binary);
    if(!inFile)
    {
        cout << "File could not be opened!! Press any Key ot exti";
        cin.ignore();
        cin.get();
        return;
    }
    cout << "\n\n\n\t\t DISPLAYING ALL RECORDS\n\n";
    while(inFile.read(reinterpret_cast<char *> (&stud), sizeof(student)))
    {
        stud.showdata();
        cout <<"\n\n============================================================\n";
    }
    inFile.close();
    cin.ignore();
    cin.get();
}
void display_sp(int n)
{
    student stud;
    ifstream iFile;
    iFile.open("student.dat", ios::binary);
    if(!iFile)
    {
        cout << "File could not be opened... Press any Key to exit";
        cin.ignore();
        cin.get();
        return;
    }
    bool flag = false;
    while(iFile.read(reinterpret_cast<char *> (&stud), sizeof(student)))
    {
        if(stud. retrollno() == n)
        {
            stud.showdata();
            flag = true;
        }
    }
    iFile.close();
    if(flag == false)
    cout << "\n\nrecord does not exist";
    cin.ignore();
    cin.get();
}
void change_student(int n)
{
    bool found = false;
    student stud;
    fstream f1;
    f1.open("student.dat", ios::binary|ios::in|ios::out);
    if(!f1)
    {
        cout << "File could not be opened. Press any Key to exit...";
        cin.ignore();
        cin.get();
        return;
    }
    while(!f1.eof() && found==false)
    {
        f1.read(reinterpret_cast<char *> (&stud), sizeof(student));
        if(stud.retrollno()==n)
        {
            stud.showdata();
            cout<<"\n\tEnter new student dtails:"<<endl;
            stud.getdata();
            int pos=(-1)*static_cast<int>(sizeof(stud));
            f1.seekp(pos,ios::cur);
            f1.write(reinterpret_cast<char *> (&stud), sizeof(student));
            cout << "\n\n\t Record Updated";
            found=true;
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            int pos=(-1)*static_cast<int>(sizeof(stud));
            f1.seekp(pos,ios::cur);
            f1.write(reinterpret_cast<char *> (&stud), sizeof(student));
            cout << "\n\n\t Record Updated";
            found=true;
        }
    }
    f1.close();
    if(found=false)
    cout << "\n\n Record Not Found ";
    cin.ignore();
    cin.get();
}
void delete_student(int n)
{
    student stud;
    ifstream iFile;
    iFile.open("student.dat, ios::binary");
    if(!iFile)
    {
        cout<<"File could not be opened... Press any Key to exit...";
        cin.ignore();
        cin.get();
        return;
    }
    ofstream oFile;
    oFile.open("Temp.dat", ios::out);
    iFile.seekg(0,ios::beg);
    while(iFile.read(reinterpret_cast<char *> (&stud), sizeof(student)))
    {
        if(stud.retrollno() != n)
        {
            oFile.write(reinterpret_cast<char *> (&stud), sizeof(student));
        }
    }
    oFile.close();
    iFile.close();
    remove("student.dat");
    rename("Temp.dat", "student.dat");
    cout << "\n\n\t Record Deleted ..";
    cin.ignore();
    cin.get();
}
```

Sets the [illegible] character is to be inserted into the output stream.

After

Sets the position of the next character to be extracted from the input stream.

move every students except the one with roll # n.

← remove the old file

← rename it